

72. (New) The solar cell module according to claim 25, wherein the degradable resin is selected from the group consisting of polycarbonate, polyacetal and cellulose.

Remarks

The claims are 1-3, 9-27, 33-48, 51, 55 and 57-72, with claims 1, 9, 17, 25, 33, 41, 51, 55 and 57-64 being independent. Claims 9-24, 33-48 and 57-64 have been withdrawn from consideration by the Examiner as being drawn to non-elected subject matter. Claims 4-8, 28-32, 49, 50, 52-54 and 56 have been cancelled without prejudice or disclaimer. Claims 1, 3 and 25 have been amended to better define the invention. Specifically, claim 1 has been amended to include the limitations of cancelled claims 4 and 7, claim 3 has been amended to correct an informality, and claim 25 has been amended to include the limitations of cancelled claims 28 and 31. New claims 65-72 have been added; support for these claims can be found throughout the specification and, in particular, at, inter alia, page 20, line 10, through page 21, line 10, and page 33, lines 7-13. Applicants submit that no new matter has been added. Reconsideration of the present claims is respectfully requested.

The Examiner has required a new, more descriptive title. Accordingly, Applicants have amended the title to read --SEMICONDUCTOR DEVICE AND SOLAR CELL MODULE HAVING DETACHABLE CONSTITUENT MEMBERS AND DEGRADABLE RESIN EXFOLIATIVE LAYER--; Applicants submit that this title is clearly indicative of the invention to which the claims are directed.

The Examiner reminded Applicants of the proper language and format of the abstract. Accordingly, Applicants have amended the abstract. No new matter has been added.

Claims 19 and 43 stand rejected under 35 U.S.C. §103(a) as being obvious over Kataoka (EP 0 680 097) in view of Lindmayer (U.S. Patent No. 4,057,439). While Applicants respectfully traverse this rejection, Applicants do not herein present a response on the merits to this rejection as claims 19 and 43 comprise non-elected subject matter. Accordingly, this rejection should be withdrawn.

Claims 52 and 56 stand rejected under 35 U.S.C. §102(b) as being anticipated by Bruton (“Re-Cycling of High Value, High Energy Content Components of Silicon PV Modules”). Claims 52 and 56 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kouzuma (U.S. Patent No. 5,215,598). Claims 50 and 54 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kataoka (EP 0 680 097). While Applicants traverse these rejections, Applicants have cancelled each of these claims in an effort to expedite prosecution in this case. Accordingly, these rejections are moot and should therefore be withdrawn.

Claims 1, 4 and 8 stand rejected under 35 U.S.C. §102(b) as being anticipated by Tatsuhiko (JP 09-289104). Claims 1-3, 25-27, 49 and 53 stand rejected under 35 U.S.C. §102(b) as being anticipated by Bohland (“Possibility of Recycling Silicon PV Modules”). Claims 1-3 and 25-27 stand rejected under 35 U.S.C. §102(b) as being anticipated by Von Den Bongard (DE 195 39 699). Claims 1 and 25 stand rejected under 35 U.S.C. §102(b) as being anticipated by Shinji (JP 05-055617). Applicants respectfully traverse these rejections. In view of Applicants’ amendment of independent claims 1 and

25 to include the subject matter of cancelled claims 7 and 31, respectively, each of these rejections is rendered moot and should therefore be withdrawn.

Claims 1, 4-8, 25 and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated by Hamamoto (U.S. Patent No. 5,397,713). Claims 1, 4-8, 25 and 28-31 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kataoka (EP 0 680 095). Claims 51 and 55 stand rejected under 35 U.S.C. §102(b) as being anticipated by Mori (U.S. Patent No. 5,660,645). Applicants respectfully traverse these rejections.

As set forth in claim 1, the present invention is directed to a semiconductor device comprising a substrate, a filler, an exfoliative layer and a semiconductor element. As set forth in claim 25, the present invention is further directed to a solar cell module comprising a substrate, a filler, an exfoliative layer, a photovoltaic element and a protective layer. In each of these embodiments, the semiconductor element or the photoconductive element is capable of being separated from the substrate. What is more, in each of these embodiments, the exfoliative layer comprises a degradable resin. As set forth in claims 51 and 55, the present invention is directed to a semiconductor device or a solar cell module in which at least one of the constituent elements can be separated from the others by irradiation with electron beams. In this way, replacement of faulty semiconductor device or solar cell module constituents is facilitated, and reuse of constituent members is made possible.

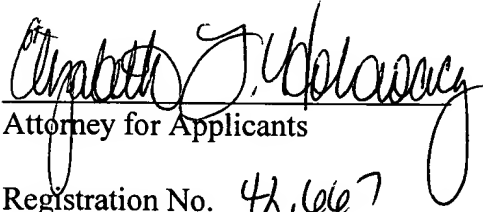
It is clear that neither Hamamoto nor Kataoka anticipates the present invention. In fact, each of these references fails to disclose a key feature of the present invention, namely the provision of degradable resin exfoliative layer. What is more, Mori fails to render the present invention obvious. Mori teaches that a filler film is crosslinked

(hardened) by electron ray irradiation. By contrast, according to claims 51 and 55 of the present invention, electron ray irradiation promotes constituent member separation, i.e., via degradation of a resin layer. This is completely different from the disclosure of Mori. Accordingly, Applicants submit that none of the cited references anticipates or renders obvious the presently claimed invention, and therefore Applicants respectfully request withdrawal of the art rejections.

In view of the foregoing amendments and remarks, favorable reconsideration and passage to issue of the present case is respectfully requested.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,


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VERSION SHOWING CHANGES TO SPECIFICATION

The paragraphs at page 46, lines 2-8, have been amended as follows:

--A solar cell module comprising a substrate, a filler, a photovoltaic element and a protective layer [, wherein at] is disclosed. At least one of the substrate, the filler, the photovoltaic element and the protective layer is separable from other constituent members.
[¶] Constituent members having been separated and still serviceable can be reused.--

VERSION SHOWING CHANGES TO CLAIMS

1. (Twice Amended) A semiconductor device comprising a substrate, a filler, an exfoliative layer and a semiconductor element which is detachable from the substrate, wherein the exfoliative layer comprises a degradable resin.

3. (Twice Amended) The semiconductor device according to claim 1, further comprising a protective layer, and which can be separated into (a) a laminate including the semiconductor element and (b) the protective layer.

Claim 4 has been cancelled.

Claim 5 has been cancelled.

Claim 6 has been cancelled.

Claim 7 has been cancelled.

Claim 8 has been cancelled.

25. (Twice Amended) A solar cell module comprising a substrate, a filler, an exfoliative layer, a photovoltaic element which is detachable from the substrate, and a protective layer, wherein the exfoliative layer comprises a degradable resin.

Claim 28 has been cancelled.

Claim 29 has been cancelled.

Claim 30 has been cancelled.

Claim 31 has been cancelled.

Claim 32 has been cancelled.

Claim 49 has been cancelled.

Claim 50 has been cancelled.

Claim 52 has been cancelled.

Claim 53 has been cancelled.

Claim 54 has been cancelled.

Claim 56 has been cancelled

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